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ABSTRACT

Because individual teachers have ultimate control over the implementation of educational innovations, their feelings toward innovation are of interest to educational researchers. The Concerns-Based Adoption Model was based on research findings about educational dissemination and change. The model describes adoption of innovation as a growth process. Each teacher, according to this model, experiences a characteristic sequence of concerns as an innovation is implemented: (1) awareness; (2) information; (3) personal; (4) management; (5) consequence; (6) collaboration; and (7) refocusing. The Stages of Concern Questionnaire was developed to measure teachers' positions concerning an educational innovation. It was developed from the statements made by 300 elementary school and college teachers about their own concerns, and factor analysis was used to select 35 items which loaded highly on the seven concerns of the model. Test reliability was satisfactory, based on internal consistency estimates of .64 to .83, and test-retest reliability of .65 to .86. Research studies have supported the test's validity. Some longitudinal studies have also demonstrated that teachers, over time, pass through the hypothesized stages. (GDC)

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STAGES OF CONCERN ABOUT THE INNOVATION: THE CONCEPT, INITIAL VERIFICATION AND SOME IMPLICATIONS

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STAGES OF CONCERN ABOUT THE INNOVATION: THE CONCEPT, INITIAL VERIFICATION AND SOME IMPLICATIONS

Abstract

Individual teachers have ultimate control over the implementation of educational innovations. The Concerns-Based Adoption Model describes innovation adoption as a process of growth. Each teacher experiences a characteristic sequence of concerns about an innovation as it is implemented. This paper describes the development and validation of a questionnaire which measures teachers' concerns about any innovation. Both the theory and the Stage of Concern Questionnaire provide researchers, administrators, change agents, and evaluators new perspectives in studying and facilitating educational change.

STAGES OF CONCERN ABOUT THE INNOVATION: THE CONCEPT, INITIAL VERIFICATION AND SOME IMPLICATIONS[1]

Our educational institutions are increasingly being confronted with change. There have been extensive efforts to alter the philosophy, content, and structure of education in the 1960's and 1970's. Educators develop and initiate many changes and society is increasingly mandating further changes in our schools and colleges. Yet policy and evaluation studies continue to report limited success in accomplishing change. Why has educational practice, if innovations are so pervasive, not been more effective in responding to the changing times?

The list of studies documenting the complexity of educational change is steadily growing (Rogers & Shoemaker, 1971; Berman & McLauglin, 1975; Emrick, Peterson, & Agarwala-Rogers, 1977; Fullan & Pomfret, 1977; Hall & Loucks, 1977). One of the factors that is emerging from these studies is the importance of the teachers' role in the change process. "It often happens that programs falter because a key factor, the human element, is inadequately considered...No innovation is likely to be successful unless the teachers' reactions to the program are carefully considered" (Stern & Keisler, 1975, pgs. ii, iii).

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[1]The research described herein was conducted under contract with the National Institute of Education. The opinions expressed hare those of the authors and do not necessarily reflect the position or policy of the National Institute of Education, and no endorsement by the National Institute of Education should be inferred.

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Although there has been a great deal of recent research on problems of planning and implementing educational programs, there has been inadequate attention to the role of individuals in the change process. It is essential to focus on the individual in order to understand the fate of an educational program in any given situation. The research reported in this paper specifically addresses the problem of how individuals react to and perceive new programs.

Assessing and describing the personal side of change is one objective of the Procedures for Adopting Educational Innovations Project at the Texas R&D Center for Teacher Education. The framework for this research has been the Concerns-Based Adoption Model (Hall, Wallace & Dossett, 1973). A key assumption of the Concerns-Based Adoption Model (CBAM) is that the individual must be attended to in establishing a frame of reference for understanding, studying and managing the change process in organizations. This assertion does not deny the importance of organizational factors (Miles, Fullan & Taylor, 1978), however it does emphasize that the total picture includes separate individuals. There is a personal side to organizational change; there are personal feelings, perceptions, frustrations, questions, joys and disappointments.

The concept of "concerns" has been developed in this research to describe these feelings, perceptions, and attitudes of individuals toward innovations in both schools and colleges. More specifically, seven Stages of Concern About the Innovation have been identified. The concept of Stages of Concern and its assessment are proving to be valuable tools for researchers, evaluators, staff developers and change facilitators who need to know about individuals as they are involved in change.

This paper describes the concept of Stages of Concern About the Innovation, related literature and procedures for assessing Stages of Concern, as well as findings from cross-sectional and longitudinal studies. The paper concludes

with a brief discussion of implications for future research, evaluation, and policy level decision-making.

SECTION I: CONCERNS THEORY

Related Research

The personal dimensions of the change process are complex and multifaceted. Many frames of reference might be emphasized in describing individuals' psychological stance toward change: motivations, attitudes, anxieties, perceptions, beliefs and values. Havelock (1971) suggests a number of relatively permanent personality characteristics that affect utilization of new knowledge. He hypothesizes that the propensity to change is influenced both by the context of the situation and by a number of less enduring characteristics of the individual. He suggests that one of the best ways to predispose individuals to change to desired behavior patterns would be through experiences which develop and reinforce the target behavior. This method is both costly and difficult if new behaviors are in conflict with earlier patterns. Havelock hypothesizes that it is critical to know <u>if</u> and to <u>what degree</u> enduring personality characteristics (such as dogmatism, value orientation, or self-esteem) are aroused. If they are aroused, acceptance or rejection of an innovation seems to depend on the congruence between these personality characteristics and the desired behavior.

Rogers and Shoemaker (1971) summarized the evidence from diffusion research pertaining to user characteristics that affect the willingness to adopt new ideas. They found empathy, dogmatism, and intelligence to be important. Their work supports the position that the utilization of new ideas, from development to use, is a process experienced by individuals, occurring over time.

Many of the references cited by Williams & Hull (1968) document the importance of the social setting in the acceptance and adoption of an innovation, but acknowledge the importance of the characteristics of the individuals as well.

Williams and Hull suggest that "innovativeness," or the degree to which an individual is among the first to adopt new ideas, is an important characteristic of the individual.

Hull, Kester, and Martin (1973) attempted to develop a conceptual framework to describe the diffusion of innovations in vocational and technical education. They identify the client (individual, group, or organization) as one of three main domains in this conceptual framework. Hull & Kester (1975) hypothesize that the clients' perceptions of their roles influence their view of diffusion tactics by change agents. They identify seven client types. Individuals who see themselves as powerless to reject an innovation tend to be more negative toward change agent tactics and tend to perceive the innovation as less effective than those who perceive they have a choice. Similarly, the studies and reviews of Van Wyck (1971), Mickelson and Armstrong (1973), Bassi and Watson (1974), Goldman and Gregory (1976), and Fullan and Pomfret (1977) support the importance of the reactions, perceptions, and value orientation of the front line user.

In a synthesis of findings from five major studies of education dissemination and change, Emrick and Peterson (1978) similarly conclude that change occurs as a process. They suggest that there are two parallel dimensions occurring simultaneously: a systemic dimension involving change in the user environment, and a personal dimension, identifying the change process occurring within individuals, including cognitive, behavioral, and affective components.

From an extensive review of the relationship between successful change attempts and teacher characteristics, Stern and Keisler (1975) conclude that overall, no demographic teacher variables were good predictors of success. "Receptivity," however, was found to be an important personality attribute, particularly when changes are nontraditional or antithetical to accepted prac-

tice. They propose that teacher reactions appear to be associated with the amount and kind of information available about the innovation, particularly regarding its components, objectives, and philosophy. They conclude that with all types of innovations, teacher attitudes are critical to successful implementation: "If any broad statement can be made, it is to reiterate that the success of any innovation is dependent upon the dedication and conviction of the teacher" (p. 128).

Clearly, these theories and findings have a common underlying theme; they all acknowledge the personal dimension of the change process and the importance of the reactions of the teacher to successful innovation adoption.

Research on Teacher Concerns

In the 1960's, staff at the Texas R&D Center for Teacher Education (UTR&D) pursued a series of studies of the personality characteristics of teachers (Peck, Bown, Fuller, & Menaker, 1967). Frances Fuller, a counseling psychologist who approached teacher education from a clinical rather than a pedagogical perspective, noted a frequent discrepancy between course content and the apparent needs of preservice teachers. Utilizing the literature on teacher anxieties and problems, clinical assessment from counseling sessions, and in-depth longitudinal interviews, she formulated a theory of teachers' "concerns" (Fuller, 1969).

It apppeared to Fuller that concerns occurred in a natural sequence. Further, this sequential pattern was hypothesized to be a developmental process commonly experienced by all teachers, not unique to teachers in a particular professional education program. Fuller initially proposed a developmental model describing three phases of concern: a pre-teaching phase, an early teaching phase (concern with self), and a late teaching phase (concern with pupils). This "concerns model" was later abstracted by Fuller to "self," "task," and

"impact," with "impact" concerns being sub-divided into several levels. A similar theory on the developmental stages of preservice teachers, a sequence of levels in professional growth, was proposed independently by Katz (1972). Taylor (1975) adapted Fuller's model and developed his own measurement instrument in a study designed to create educational contexts for teacher preparation students geared to their concerns. He reported that, over time, concerns about control and self-adequacy decrease. Concommitantly, coping behavior and pupil-related concerns increase, offering some evidence for validation of the Fuller model.

Rafky and Beckerman (1971) report one initial reaction to any change is concern for self. Their study was designed to determine the relative effects of altruism (defined as concern for students) and self-interest in the acceptance of a number of proposed educational innovations. When other variables such as personal attributes, career patterns and characteristics of the school were controlled, they found that teacher willingness to devote time and effort to implement an innovation was related more to self-interests (i.e. self concerns) than to concerns for students (i.e. impact concerns).

While Fuller was conducting her work on teacher concerns, other researchers at the Texas R&D Center were engaged in experiences with innovation adoption in public schools, institutions of higher education and, to some extent, industry. These staff frequently discussed the innovation adoption process with change agents. It soon became apparent to the UTR&D staff that persons involved in the change process expressed "concerns" about innovations quite similar to those which were identified by Fuller. Subsequently, the staff began gathering qualitative data to document the innovation adoption process as part of their ongoing field work (Farrington, Hall, Manning, & Wallace, 1974; Wallace, 1973).

SECTION II: STAGES OF CONCERN ABOUT THE INNOVATION

Ultimately, influenced by the research of Fuller, the change literature, the qualititative data describing innovation implementation, and their field experience, the UTR&D researchers began to develop a model describing the innovation adoption process. The Concerns-Based Adoption Model (Hall, Wallace & Dossett, 1973) is thus grounded in both conceptual literature and field experience. One of the basic dimensions of this model is Stages of Concern About the Innovation which attempts to describe the personal aspects of change.

The concept of "concerns" is defined as:

> The composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task is called concern. Depending on our personal make-up, knowledge, and experiences, each person perceives and mentally contends with the given issue differently; thus there are different kinds of concerns. The issue may be interpreted as an outside threat to one's well-being, or it may be seen as rewarding. There may be an overwhelming feeling of confusion and lack of information about what "it" is. There may be ruminations about the effects. The demand to consider the issue may be self-imposed in the form of a goal or objective that we wish to reach, or the pressure that results in increased attention to the issue may be external. In response to the demand, our minds explore ways, means, potential barriers, possible actions, risks, and rewards in relation to the demand. All in all, the mental activity composed of questioning, analyzing, and anticipating consequences is concern. An aroused state of personal feelings and thought about a

demand as it is perceived is concern. (Hall, George & Rutherford, 1977, p. 5)

The model developers hypothesized that concerns change as users become increasingly familiar with and skilled in using the innovation. This progression appears to be very similar to that observed by Fuller with student teachers: early concerns deal with self, then come task-related concerns; and finally concerns about the impact of the innovation on others. It appeared that it was necessary for early stage concerns to be resolved, or at least reduced in intensity before later more mature concerns can emerge or increase in intensity. Seven Stages of Concern (SoC) About the Innovation are identified in the model. These stages are presented in Figure 1.

An individual does not have concerns at a single stage but instead a conglomeration of concerns. Although concerns on each stage exist, concerns at one or two stages are relatively intense. In other words, a person's concerns at a point in time would be high on one or two stages and low on several other stages. Figure 2 is a graphic representation of the hypothesized evolution of the intensity of Stages of Concern About the Innovation. According to the model, nonusers of an innovation have intense Stage 0, 1, and 2 concerns, with low intensity Stage 4, 5, and 6 concerns. As use of an innovation begins, Stage 3 Management concerns would become most intense, with Stages 0, 1, and 2 concerns decreasing in intensity, and Stage, 4, 5, and 6 concerns gradually increasing in intensity. With experience and increased sophistication in use, Stage 4, 5, and 6 concerns become increasingly intense while Stages 0, 1, 2, and 3 concerns continue to decrease in intensity.

Figure 1

DEFINITIONS: STAGES OF CONCERN ABOUT THE INNOVATION*

6 REFOCUSING: The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

5 COLLABORATION: The focus is on coordination and cooperation with others regarding use of the innovation.

4 CONSEQUENCE: Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

3 MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

2 PERSONAL: Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision-making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

1 INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

0 · AWARENESS: Little concern about or involvement with the innovation is indicated.

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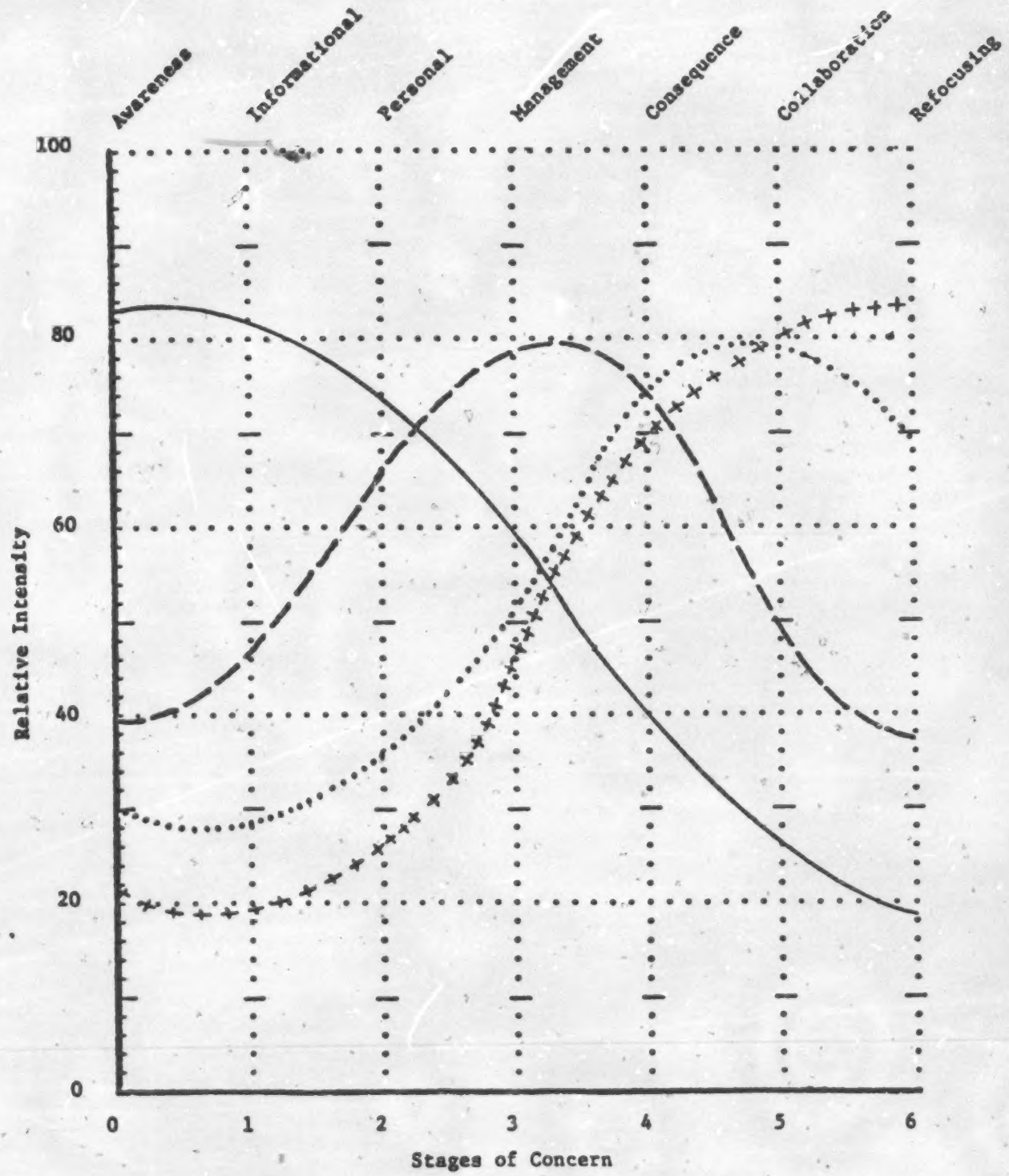
*Original concept from Hall, G. E., Wallace, R. C., Jr., & Dossett, W. A. A developmental conceptualization of the adoption process within educational institutions. Austin: Research & Development Center for Teacher Education, The University of Texas, 1973.

Measurement described in Hall, G. E., George, A. A., & Rutherford, W. L. Measuring stages of concern about the innovation: A manual for use of the SoC Questionnaire. Austin: Research & Development Center for Teacher Education, The University of Texas, 1977.

Figure 2

Hypothesized Development of Stages of Concern



_____ = Nonuser

_ _ _ _ = Inexperienced User

..... = Experienced User

+ + + + = Renewing User

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SECTION III: MEASURING STAGES OF CONCERN ABOUT THE INNOVATION

In order to verify the existence of Stages of Concern About the Innovation (SoC) and test some of the hypotheses formulated about change in concerns, formal instrument development procedures were initiated in late 1973. Several different formats and methodologies were explored. The first pilot instruments consisted of open-ended questionnaires, Likert-type scales, checklists, and interview procedures.

By the spring of 1974, two successful methods for assessing concerns had been identified. The first method is the Stages of Concern Questionnaire (or SoCQ), a quick scoring pencil-and-paper instrument (George, 1977) that is described below. The second method is a clinical instrument using open-ended questions (Newlove & Hall, 1976).

The SoC Questionnaire

In February 1974, a sample of approximately 300 elementary teachers and college professors were asked to express in writing their concerns about innovations that were being adopted at their institutions. These statements and others generated by project staff constituted a pool of over 500 statements of concern about an innovation. Each item was edited so that it could refer to any innovation. Ten staff subsequently Q-sorted these using the seven Stages of Concern definitions. Those items that six or more of the ten judges agreed were indicative of a particular Stage of Concern were used to construct a 195-item questionnaire.

In the spring of 1974, the 195-item prototype measure was completed by a sample of elementary school teachers (N=174) in relation to the innovation of

team teaching and a sample of college professors (N=192) in relation to the innovation of instructional modules. Respondents indicated the extent to which each statement was indicative of them on a one to seven Likert scale. The samples were stratified according to years of experience with the innovation, ranging from individuals having no experience to those with five or more years of experience with teaming or modules. The resultant data (N=366) were then factor analyzed. Ten principal component factors were extracted which had eigenvalues greater than 1.0. The last three factors were unidentifiable because no items had primary loadings on them. The other seven factors were VARIMAX rotated (Veldman, 1967). Stages of Concern scores calculated by summing each teacher's or professor's responses on the items assigned to each scale were correlated with factor scores computed on the basis of VARIMAX rotated factor structure. These correlations are summarized in Table 1. VARIMAX factor 7 corresponds to

Table 1
Correlations Between VARIMAX Factor Scores and Scale Scores on the 195 Item Stages of Concern Questionnaire

		VARIMAX Factor Scores						
		7	1	6	3	4	2	5
	0	.83	-.36	.41	.04	.05	-.04	-.09
	1	.46	.67	-.40	-.10	.22	-.35	.01
Soc	2	-.14	.49	.72	.36	.04	-.14	.26
Scale	3	.10	-.04	-.34	.91	.10	.12	-.12
Scores	4	-.14	-.19	.00	.12	.96	-.02	-.07
	5	.10	.37	.11	-.11	.11	.82	-.34
	6	.16	-.05	-.17	-.02	.07	.40	.88

the SoC scale for Stage 0 (r=.83), factor 1 corresponds to Stage 1 (r=.67), etc. The numbers on the VARIMAX factors reflect the order in which the factors were extracted in the principal components factor analysis. These two samples, with different professional orientations, with different innovations, with varying amounts of experience with the innovation, and no knowledge about concerns theory, had apparently responded to the items using dimensions which corresponded to the hypothesized concern stages. This led project members to infer that the seven scales of the questionnaire items tapped distinct constructs which could be identified as the seven Stages of Concern proposed in the Concerns-Based Adoption Model. A 35-item Stages of Concern Questionnaire (SoCQ) was constructed by selecting five items from among those having their highest factor loadings on each of the rotated factors.

The SoC Questionnaire is scored by summing the responses to the five items on each scale and referring the totals to a percentile table. Stage of Concern profiles can then be plotted from the generated scores. Each profile reflects the relative intensity of each Stage of Concern and presents a general picture of the concerns of the individual. A group profile can also be plotted to describe the average intensity of each concerns stage. A computer program has been written to perform these tasks.

Reliability of the SoCQ

In the fall of 1974, a sample of teachers and professors (N=421) expressed their concerns about the innovations of team teaching and instructional modules using the 35-item SoC Questionnaire. These data were analyzed for internal reliability; alpha coefficients (KR-20) for each of the seven scales ranged from .64 to .83.

A subsample of 171 teachers were asked to complete the SoC Questionnaire a second time, two weeks after their initial completion of the instrument. Most of these teachers (N=132) completed and mailed in this "retest" data. Test-retest correlations on the seven scales ranged from .65 to .86. These statistics indicate satisfactory reliability of the SoC Questionnaire.

Validity of the SoC Questionnaire

Following the recommendation of Cronbach and Meehl (1955), project researchers endeavored to demonstrate that scores on the questionnaire relate to each other and to other variables as would be expected from the concerns theory. Thus, intercorrelation matrices, judgments of concerns based on interview data, confirmation of expected group differences and changes over time have been used to investigate the construct validity of the SoCQ scores.

For example, the scale scores correlate with each other in the way developmental scores could be expected to correlate. Table 2 shows these intercorrelations, based on the sample of 832 teachers and professors who completed the

Table 2
Intercorrelation of 35-Item
Stages of Concern Questionnaire Scale Scores

		Stages					
		1	2	3	4	5	6
Stages	0	.48	.39	.13	-.27	-.30	-.16
	1		.81	.32	.19	.18	.17
	2			.47	.23	.18	.25
	3				.24	.12	.37
	4					.58	.57
	5						.49

questionnaire in the fall, 1974. The correlations near the diagonal are higher than those further removed. Guttman (1957) has applied the term simplex to this type of pattern. Each scale is most similar to scales immediately beside it than scales farther away. Thus, scores on the questionnaire indicate an order consistent with the hypothesized order of the Stages of Concern.

A more traditional validity study was conducted in August and September, 1976. Twenty-eight teachers and 37 professors were selected at random from a group of several hundred individuals who completed the SoC Questionnaire in the spring of 1976. Staff members first assessed their concerns by listening to taped interviews. The highest apparent stage of concern was indicated by the raters along with one or two "also high" concerns. The remaining four or five stages were, by implication, of lower concern.

An intra-class correlation coefficient (Ebel, 1951) was used to estimate reliability of the staff ratings of concerns based on the interviews. Ratings of the "highest" and "also high" concerns showed reliabilities between .42 and .85. Six of the seven were above .58 ($p<.01$). Only Stage 3 showed a marginal reliability (.42, $p=.06$).

The SoC percentile scores were used to rank order the intensity of each teachers' concerns, and correlations between the investigators' ratings and the rank order of the SoC percentile scores were computed. Stage 5 had the highest correlation ($r=.54$). Stages 1 and 2 also had acceptable correlations, (.47 and .42). Stages 0, 3, and 6 were lower but still significant (.27, .30 and .31), while Stage 4 failed to correlate significantly ($r=.13$). Six out of seven significant correlations ($p<.01$) were very encouraging. It was concluded that, except for Stage 4, validity of the SoCQ is supported by this analysis. The correlation for Stage 4 may have been lower due to the social desirability of student oriented concerns.

Perhaps the most convincing demonstrations of the validity of the Stages of Concern Questionnaire have come in the course of its use over the last three years in other cross sectional and longitudinal studies (Loucks & Hall, 1979; Hall, 1979).

For example, in one study the faculties of two elementary schools in an urban school district were invited to participate in a summer workshop where they would help learn to use a new approach to reading instruction. Approximately half (N=22) of the faculty members were able to attend a five-week summer workshop. To accommodate those who were not in the workshop (N=25), a one-day workshop was set up just prior to the opening of school in the fall to explain the new program and its implications. The summer workshop participants were also meeting on that same day in a separate location. Both groups were asked to complete the 35-item Stages of Concern Questionnaire as the first activity of the day.

Persons who had not attended the workshop indicated higher concerns on Stages 0, 1, 2, and 4 ($p < .01$). There were no significant differences between the groups on Stages 3, 5, and 6. Assuming that the groups were comparable except for workshop attendance, it can be inferred that the workshop lowered the teachers' Awareness, Informational, and Personal concerns (Stages 0, 1, and 2). In addition, concerns about the effects of the innovation on students (Stage 4) were lowered by the workshop.

Conclusions About the SoC Questionnaire

In summary, studies with the SoC Questionnaire have indicated that reliability of the instrument is satisfactory. In a two week test-retest study, stage score correlations ranged from .65 to .86, with four of the seven correlations at above .80. Estimates of internal consistency (alpha coefficients)

ranged from .64 to .83 with six of the seven coefficients at above .70. A series of validity studies were conducted, all of which provided evidence that the SoC Questionnaire measures seven separate constructs identifiable as the Stages of Concern as they have been conceptualized.

SECTION IV: RESEARCH ON STAGES OF CONCERN

Testing Hypotheses About Stages

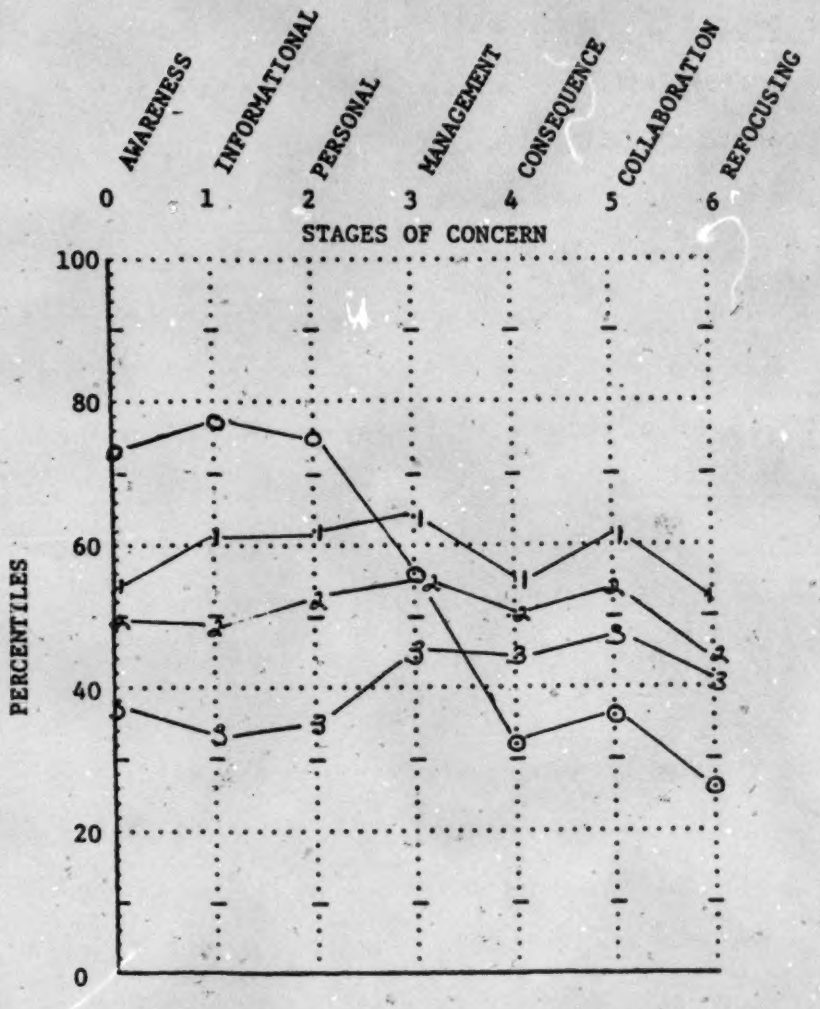
A number of studies have been conducted with the SoCQ to test the theory of concerns. Two primary foci of these studies were (1) to confirm whether or not innovation users experience different stages of concern as they progress through the change process and (2) to determine whether or not observed changes in concerns follow a developmental pattern. One important variable in sample selection was the amount of experience of the teachers with a given innovation. A sample stratified according to years of experience with an innovation would, hypothetically, maximize the chances of including individuals with all possible stages of concern. A variety of settings and contrasting innovations were also sampled in order to lend more generalizability to the findings.

To test the hypothesized changes in concerns, cross-sectional analyses were made on the data from the 411 public school teachers who completed the SoC Questionnaire in relation to the innovation of team teaching (Hall, 1976a; Hall & Rutherford, 1976). Figure 3 shows Stage of Concern profiles for those teachers who had 3 or fewer years of experience with teaming.

As hypothesized, the "nonusers" of teaming were most intensely concerned on Stages 0, 1, 2 and least intensely concerned on Stages 4, 5, 6. This nonuser concerns profile has since been replicated with other innovations and samples (Hall, 1978). The teachers who were in their first year of teaming had the most intense concerns at Stage 3, Management. These data are consistent with concerns theory which predicts high Management concerns for beginning users. Teachers in their second year of teaming also had high Stage 3 concerns. Teachers in their third year of teaming reflected relatively low concerns on Stages

Figure 3

Teachers Concerns About Team Teaching Broken Down By Years of Experience in Teaming



0 = No experience (N=47)

1 = 1 Year experience (N=74)

2 = 2 Years experience (N=18)

3 = 3 or more years experience (N=60)

0, 1, and 2; their Stage 3, Management concerns were still relatively intense. In addition, the overall shape of the profile for the third year teamers indicate that concerns were relatively high on Stage 4, 5, and 6.

The continuing high Stage 3 Management concerns for the total sample in the teaming study might be due to the complexity of the innovation. Teaming is a group-adopted process innovation, and in many study schools very little support or training was provided teachers to facilitate implementation. For teachers using the "discovery approach" to adoption, mastery of teaming appears to take an unusually long period of time. Three years of trial and error may not be uncommon. However, SoCQ profiles for some teachers did reflect intense Stage 4, 5, and 6 concerns in many cases (Hall & Rutherford, 1976; Hall, 1976a,b; Loucks, 1977).

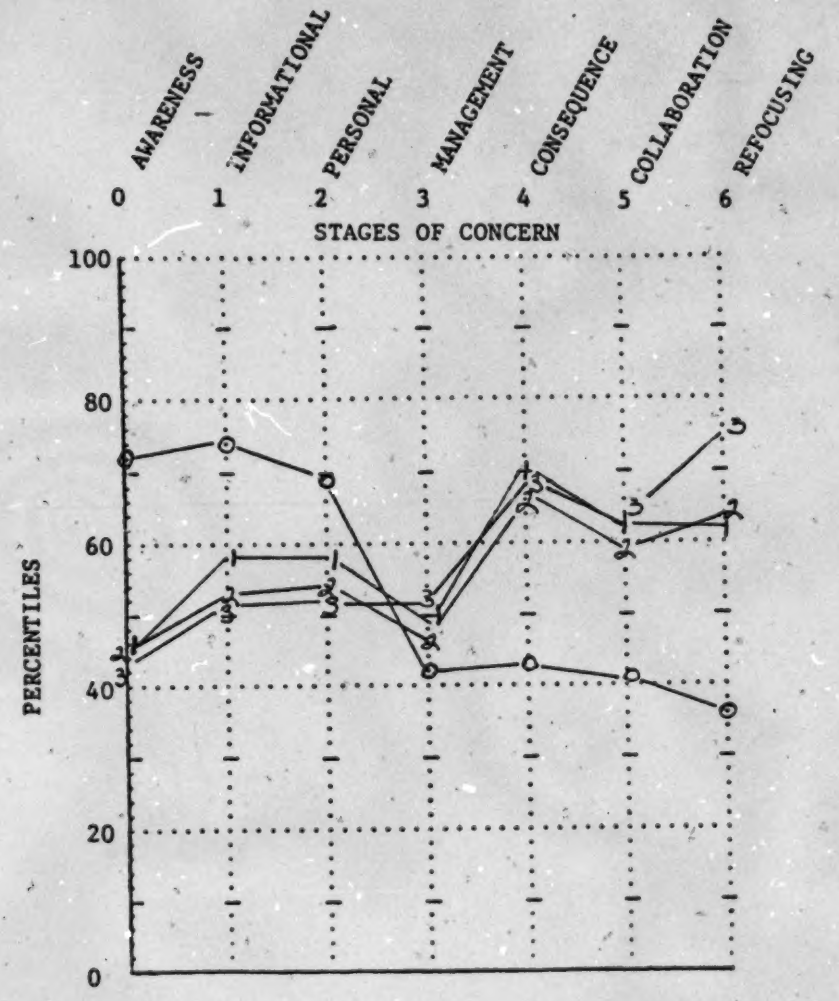
The sample of 421 college professors was also broken out according to years of experience in using the innovation of instructional modules (Hall, 1976a,b). Figure 4 shows Stage of Concern profiles for instructors having 3 or less years of experience with modules. The nonusers of instructional modules reflected a similar nonuser's concerns profile: most intense concerns at Stages 0, 1, 2; least intense concerns at Stages 3, 4, 5, and 6. Unlike the teaming data, these profiles reflect a higher degree of Stage 4, 5, and 6 concerns for all module users, with relatively low Stage 3 (Management) concerns.

Apparently, either the module users did not have intense Management concerns at any time or else their Management concerns had been quickly resolved. Modules are much more easily implemented than teaming, and can be adopted by the individual without outside support. It appears that module users were able to quickly resolve their Management concerns.

An interesting methodological oversight complicated identification of transient Stage 3 (Management) concerns of inexperienced module users and lead to an

Figure 4

Professors' Concerns About the Use of Modules Broken Down By Years of Experience with Modules



0 = No experience (N=147)

1 = 1 Year experience (N=63)

2 = 2 Years experience (N=40)

3 = 3 or more years experience (N=34)

important insight about the change process. On the demographic page of the SoC Questionnaire, respondents were asked to report "years" of experience with instructional modules. It now appears that the notion of "years of experience" should have been replaced by the concept of cycles of use of the innovation. Normally, an entire school year is required for a teacher to complete one cycle of use for teaming. However, a college professor would complete one cycle of use with modules in one semester. Thus, in one full year, including summer sessions, a college instructor could, conceivably, use a module through three or more cycles. In terms of cycles of use, it is reasonable to expect that Management concerns would be fairly well resolved by the end of the third or fourth cycle. This cycling phenomenon may explain the low Stage 3 concerns obtained for users for this particular innovation.

Changes in SoC Over Time

A two year study during which SoC data were collected at various points in time offers another test of the hypothesized developmental change in concerns (Loucks, 1977). Concerns of a small sample (N=50) of elementary school teachers involved in implementing the Science Curriculum Improvement Study (SCIS) curriculum were assessed five times during a two year period, including before and after a two week summer training workshop. It was found that concern stages for individuals in the sample did follow a general developmental trend. Among both users and initial nonusers, Stages 0, 1, and 2 concerns decreased in intensity over time, while Stages 4, 5, and 6 concerns increased in intensity.

The cross sectional teaming and module studies reported on earlier were part of a longitudinal study. Approximately 300 of the same subjects in the cross-sectional teaming and module samples were retested with the SoCQ over a period of two years (Hall, 1976a,b). It was found that, for the sample as a

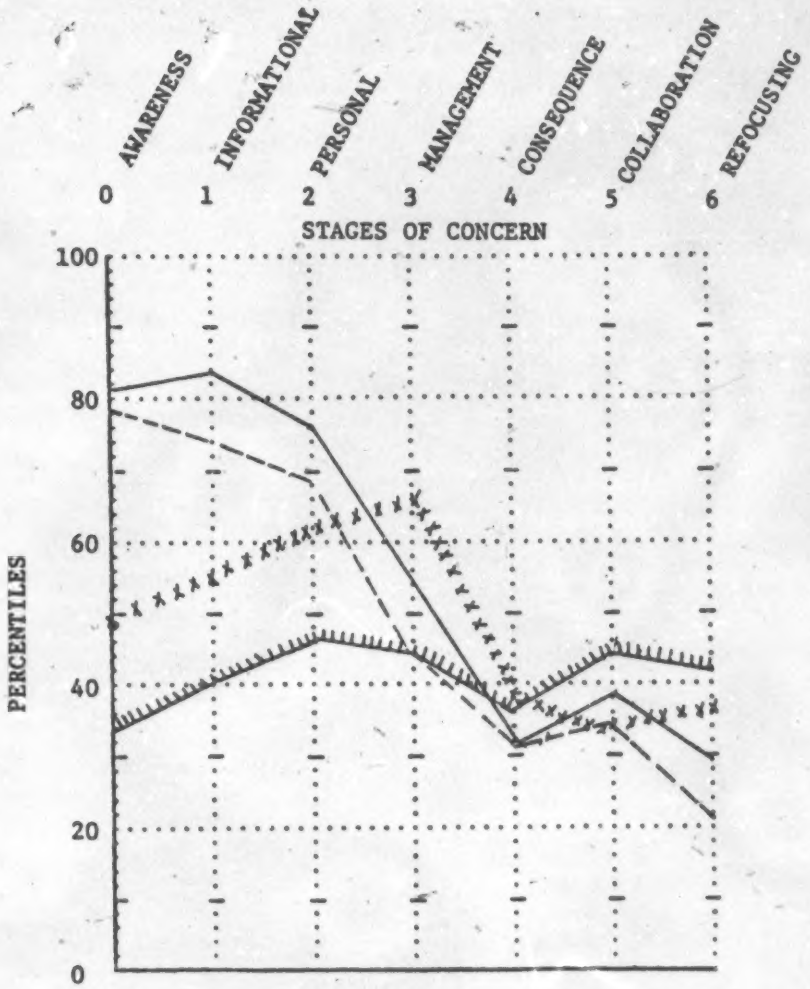
whole, profound shifts in concerns levels did not occur. At the department and school level however, stage shifts did occur which could be explained.

For example, Figure 5 is a presentation of the concerns profile for one small school. During the 74-75 school year the teachers were not teaming, but were planning to begin in the fall of 75. As teacher use of the innovation (teaming) began, concerns profiles shifted in the predicted directions. Stages 0, 1, and 2 were initially high and decreased in intensity over time. Stage 3 "Management" concerns increased during the fall of 1975 and decreased again by the spring of 76. During the two years of the study, the shape of the concerns profile shifted toward impact concerns although their intensity is never high. The project staff observed that the school described here had an optimal contextual climate, an interested faculty and an exceptionally skilled and motivated change facilitator as principal. The innovation was fully adopted and faculty received appropriate interventions to facilitate the process.

None of the other 39 schools in this study demonstrated the hypothesized transition as obviously. Many of the schools had established ways of teaming and there was as little change practice during the period of the study. In other schools, documented "interventions" or alterations in external conditions appeared to be associated with shifts in concerns. The changes in concerns made sense, considering contextual interventions, although they were not in the hypothesized directions. For example, in one school the teachers remained as nonusers of teaming with nonuser concerns profiles. However, in the spring of the second year of the study, an "intervention" was made by the school system. Without warning, it was announced that the principal would be transferred to another school. In addition, the school's new principal was not identified. Stage 1, Informational and Stage 2, Personal concerns increased 20 percentile points from the previous assessment period.

Figure 5

Two Year Movement of Teachers' Concerns
About Teaming in One Small School



Fall 1974

Spring 1975

Fall 1975

Spring 1976

This scenario and others like it document that concerns are not static; movement in concerns is influenced not only by the passage of time but also by interventions and conditions that may not even be directly associated with the innovation. The complexity of the innovation, support for the change effort, the attitudes of colleagues, the role and skill of the unit manager (e.g. principals and deans), and external conditions seem to be relevant variables that must be taken into account in interpreting longitudinal SoCQ data. Concerns of innovation users are influenced by many factors in their personal and professional environment. Also, the resolution of early concerns does not automatically occur because the innovation is available, because subjects are encouraged to use it, or because time has passed.

During the two-year period of the longitudinal teaming and module studies, schools and universities were identified in which no identifiable innovation related interventions were made (Rutherford, 1977). The SoC profiles of these institutions remained virtually stable. On the other hand, changes in SoC profiles were evident in institutions where interventions had occurred. This finding suggests that interventions (e.g., inservice workshops, direct personal assistance, etc.) designed to recognize and accommodate concerns may influence resolution and arousal of concerns. Restated, appropriate interventions, targeted toward specific stages of concern might facilitate their resolution and the movement toward more impact related concerns (Hall, 1978; Hall & Loucks, 1978).

It should be noted that in the preceding discussion, study findings were based on aggregated (group) concerns profiles. Although the use of aggregated data appears to be a legitimate method of assessing the concern stages of a group in general, each individual's profile must be examined in order to fully understand concerns. At any moment, each individual has unique concerns about

the use of the innovation (Hall & Loucks, 1977; Loucks, 1977; Rutherford, 1977; George, Rutherford, Hall & Loucks, 1976; Hall, 1976b). Though group concerns profiles are useful for research purposes, we believe that the diagnosis, prescription, and delivery of interventions for optimal facilitation of the innovation adoption process must be targeted to the individual (Hall, 1979). This does not mean that group targeted interventions are inappropriate but that the interventions must be designed to accommodate individual differences in concerns.

SECTION V: SUMMARY AND DISCUSSION

Studies thus far have indicated that Stages of Concern about the Innovation do exist and can be measured. Research has also demonstrated that individuals do not have concerns at only one stage at a time; but, rather, experience all stages concurrently, with varying degrees of arousal, intensity, and resolution. Stages of Concern are not static, but change over time and can change in a developmental fashion. However, the arousal and resolution of concerns appear to be greatly influenced by interventions and contextual variables.

In general, innovation nonusers have their most intense concerns prior to and at the onset of implementation on Stages 0, 1, and 2. They are most concerned with gaining information about the innovation and with the implications about the change for them personally. They are much less concerned (relatively speaking) with the impact of the innovation on students. As use begins, Management concerns increase in intensity and with time it is possible for Impact concerns to increase in intensity.

To date, the theoretical concept of SoC has been developed and a way of assessing SoC has been initially verified. Within this framework, it is now possible to ask a number of questions about the change process as it is personally experienced. A few questions that are particularly intriguing and critical to increasing our understanding of the improvement process in schools and colleges are:

1. What are the implications of viewing change as a process? Recently, policy makers have begun to recognize that change is a process, not an event. For example, implementation of P.L. 94-142 has included several strategies that are spread over time to support teachers, college faculty, state education agen-

cies and others who are to become users of mainstreaming concepts. What are reasonable expectations for the length of time it takes to implement innovations? How should funding for change and evaluation of change be designed to take into account what is known about the process as it is experienced by individuals?

2. What are the factors that affect the arousal and resolution of concerns? The change process includes many factors that might contribute to the arousal and resolution of concerns. Administrators appear to play a significant role in shaping the concerns of their staff. Inservice workshops, resource support, past experience and personality factors are probably influential. Context factors must also be considered as must the characteristics of the innovation. How do all of these factors interrelate to affect the concerns of individuals? What are the implications of knowing the influence of different factors for practicing change facilitators and policy makers? Also, to what extent are the concerns profiles described in this report normative; i.e., in designing fundamental internal processes involved in any change?

3. Why is there such a difference among individuals in the rate of arousal and resolution of concerns? A commonly held assumption is that teachers and professors should always be student-oriented. Concerns theory and the data indicate that while student-oriented concerns (Stages 4, 5, and 6) are nearly always present, they are not always the most intense concerns. What are the characteristics of persons who continually have high Impact concerns? How are these individuals different from those who continually indicate Informational, Personal and Management concerns?

4. What is institutionalization from a concerns perspective? From a concerns-based perspective institutionalization occurs at the time when most individuals within the organization have resolved (lowered) their concerns on

Stages 1, 2, and 3. This does not mean to suggest that Impact concerns must necessarily be aroused. All that is proposed is that in order for use of an innovation to be continued in a regular patter, high intensity Informational, Personal and Management concerns must be resolved. If these early concerns remain intense, then the user is apt to modify the innovation or their use of the innovation, or perhaps discontinue use, in order to reduce the intensity of these concerns. If this criteria for institutionalization is applied to a change effort, what are effective facilitating strategies for the resolution of these early concerns? What should the unit of intervention be: the individual, a small group, the building staff as a group, all teachers/professors at one grade level? How should all of these facilitating actions be supported and coordinated?

Past research has clarified to some degree our understanding of organizations. More recent research has developed understanding about how the members of an organization function in terms of group processes. The research from the concerns-based perspective is adding understanding about how the individual experiences change within the organizational context. Further research of both descriptive and correlational designs clearly are needed from all these perspectives. There is also an increasing need for cross perspective study, analysis, and theory building such as Hood (1978) and Emrick & Peterson (1978) have done. Improving schooling requires a much more sophisticated understanding of the change process; and it is anticipated that the concerns theory will provide new understandings of the influence of the individual and lead to more personally relevant ways of facilitating change.

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